

PIMS-UVic Distinguished Lecture



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2 pm, Wednesday, March 16th

University of Victoria, Maclaurin Building, room D101

Models of Malaria with Applications to Malaria in Mali and US

In this talk, we will introduce a deterministic malaria model for determining the drug administration protocol that leads to the smallest first malaria episodes during the wet season. To explore the effects of administering the malaria drug on different days during the wet season while minimizing the potential harmful effects of drug overdose, we will define 40 drug administration protocols. Our results fit well with the clinical studies of Coulibaly *et al.* at a site in Mali. In addition, we will provide protocols that lead to smaller number of first malaria episodes during the wet season than the protocol of Coulibaly *et al.*

In the second part of the talk, we will use our malaria model to "capture" the 2013 Centers for Disease Control and Prevention (CDC) reported data on the 2011 number of imported malaria cases in the US. Furthermore, we will use our "fitted" malaria models for the top 20 countries of malaria acquisition by US residents to study the impact of protecting US residents from malaria infection when they travel to malaria endemic areas, the impact of protecting residents of malaria endemic regions from mosquito bites and the impact of killing mosquitoes in those endemic areas on the 2013 CDC malaria surveillance.



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